

**Amendments to the Claims:**

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A' Claim 1 (Currently Amended) An a-WO<sub>3</sub> ~~gate~~ gated ISFET device, comprising:  
a semiconductor substrate;  
a gate oxide layer on the semiconductor substrate;  
an a-WO<sub>3</sub> layer formed by RF-sputtering overlying the gate oxide layer to form an a-WO<sub>3</sub> gate;  
a source/drain in the semiconductor substrate beside the a-WO<sub>3</sub> gate;  
a metal wire on the source/drain; and  
a sealing layer overlying the metal wire, and exposing the a-WO<sub>3</sub> layer.

Claim 2 (Original) The device as claimed in claim 1, wherein the length of the channel, the width of the channel and ratio of width/length of the channel of the ISFET is about 50μm, 1000μm, and 20 respectively.

Claim 3 (Original) The device as claimed in claim 1, wherein the semiconductor substrate is P-type.

Claim 4 (Original) The device as claimed in claim 1, wherein the resistivity of the semiconductor substrate ranges from 8 to 12 Ω•cm.

Claim 5 (Original) The device as claimed in claim 1, wherein the lattice parameter of the semiconductor is (1,0,0).

Claim 6 (Original) The device as claimed in claim 1, wherein the thickness of the gate oxide is about 1000Å.

Claim 7 (Original) The device as claimed in claim 1, wherein the thickness of the tungsten oxide layer is at least 1000Å.

A'  
(cont'd)  
Claim 8 (Original) The device as claimed in claim 1, wherein the metal wire consists of Al.

Claim 9 (Original) The device as claimed in claim 1, wherein the sealing layer consists of epoxide resin.

Claim 10 (Original) The device as claimed in claim 1, wherein the source/drain is N-type.

Claim 11 (Original) The device as claimed in claim 10, wherein the N-type impurities within the source/drain consist of phosphorous.

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